

Kerr SonicFill™ Sonic Activated Composite Placement System



(Project #11-016) (6/13)

SonicFill is a sonic-activated, bulk fill dental composite system for posterior restorations that purportedly requires no additional capping layer. Proprietary sonic activation enables a rapid flow of composite into the cavity for easy placement and good adaptation. The manufacturer states that an operator can go from placement to a polished restoration in less than 3 minutes on cavities up to 5mm in depth. SonicFill™ is a bulk fill system comprised of a specially designed handpiece and new, bulk-filled composite material in Unidose tips. SonicFill's composite incorporates a highly-filled proprietary resin with special modifiers that react to sonic energy. The manufacturer states as sonic energy is applied through the handpiece the modifier causes the viscosity to drop (up to 87%), increasing the flowability of the composite, enabling quick placement and precise adaptation to the cavity walls. When the sonic energy is stopped, the composite returns to a more viscous, non-slumping state for carving and contouring.



Ten dentists, ranging in experience from one to twenty-six years, with an average of seven years of experience, placed 72 SonicFill restorations in patients over a six-month period. Thirty Class I restorations were performed, 32 Class II, 3 Class III and 7 core build-up restorations. All evaluators thought that the size, weight and balance of the SonicFill instrument were acceptable and that the operating instructions were easy to follow. Ninety percent of evaluators thought that the size of the instrument allowed for good access and visibility of the operative area. Ninety percent of the evaluators thought that the noise level was acceptable. All evaluators thought that the instrument performed reliably. Evaluators unanimously felt that the instrument did what it claimed to do—predictably and effectively applied composite to the cavity preparation without voids.

Evaluators reported using a variety of adhesives: Optibond Solo Plus and Scotchbond Universal were the most popular. All evaluators reported using a dispensing rate of 3. Overall, evaluators were very satisfied with SonicFill's handling, and thought that the material's viscosity, stickiness to instruments, flow and ability to hold shape and resist slumping were acceptable. Evaluators felt that the material shaped easily and adapted to cavity walls. Evaluators felt that the shade range was acceptable, but wanted more shades. They felt that the surface and polishability of SonicFill Bulk Fill Composite was good. Evaluators also felt that the cure time, depth, radiopacity and overall esthetics were excellent. Eighty percent of evaluators thought that SonicFill's restorative material had a chameleon-like effect.

Laboratory testing demonstrated an adequate depth of cure of at least 4mm. DECS materials testing protocol only allows for accurate measurement up to 4mm, so we could not test the depth of cure at 5mm, which Kerr Corporation advertises as their increment depth. A review of laboratory work by Rueggeberg (Monomer Conversion of various thicknesses of SonicFill™ and competitive products), Thompson (SonicFill™ Depth of Cure), and Yapp and Powers (Depth of Cure of Several Composite Restorative Materials) all demonstrated that SonicFill Bulk Fill restorations were well-cured at 5mm.

Ninety percent of evaluators said they would purchase SonicFill for their clinic.

Manufacturer:

Kerr Corporation

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| Product Description | Suggested Retail Price | Government Price |
|--|-------------------------------|-------------------------|
| SonicFill Intro Kit Part# 34924, Contains: 1 SonicFill Handpiece, 40 Unidose Tips in A2, 10 Unidose Tips in A1, 10 Unidose Tips in A3, 1 Getting Started Kit, Directions for Use, Technique Guide and Technique Video | \$1086.10 | \$680.00 |
| SonicFill Value Kit Part# 35150, Contains: 1 SonicFill Handpiece, 40 Unidose Tips in A1, 40 Unidose Tips in A3, 220 Unidose Tips in A2, Directions for Use, Technique and Technique Guide. | \$2043.15 | \$1,281.41 |
| SonicFill Unidose Refills , Contains 20 Unidose tips (0.3 g each) in the following shades, A1 (Part #34921), A2 (Part # 34922) A3 (Part #34923), and B1 (Part #35285) | \$136.25 | \$85.43 |
| SonicFill Handpiece Part# 35215 | \$883.00 | \$603.46 |
| Kerr MULTIflex Coupling Part# 35134 | \$200.00 | \$136.68 |
| SonicFill Handpiece Lubrication Spray Part #35207 | \$50.00 | \$34.17 |

ADVANTAGES:

- + Better flow of material into the cavity than using hand placement
- + Reliable bulk fill
- + Reportedly low shrinkage
- + Excellent for use in core build-ups
- + Confident that there are no voids

DISADVANTAGES:

- Possible waste of material due to overfills
- Would like to see longer tips
- Limited variation of shades
- No need for speeds 1 and 2—they are too slow

SUMMARY AND CONCLUSIONS:

Kerr SonicFill™ Composite Placement System and **Bulk Fill Composite** were readily accepted by evaluators. They felt that the instrument was easy to use, performed reliably, and adapted composite to the preparation well and without creating voids. DECS' laboratory evaluation using Fourier Transform Infrared Spectrophotometry (FTIR) revealed that SonicFill bulk-filled restorations could be placed to a depth of at least 4mm. DECS testing protocols do not allow accurate measurements past 4mm, but work from other notable scientists suggests that this material can reliably be cured to depths up to 5mm. **Kerr SonicFill™ Composite Placement System** is rated **Excellent** for use in US Air Force dental facilities.

